

WHAT IS CLAIMED IS:

1. A diesel fuel additive for reducing a pollutant emission, the additive comprising:

a plant oil extract;  
an antioxidant; and  
a thermal stabilizer.

2. The diesel fuel additive of claim 1, wherein the plant oil extract comprises an oil extract of a plant of the *Leguminosae* family.

3. The diesel fuel additive of claim 1, wherein the plant oil extract is selected from the group consisting of oil extract of vetch and oil extract of barley.

4. The diesel fuel additive of claim 1, wherein the plant oil extract comprises chlorophyll.

5. The diesel fuel additive of claim 1, wherein the antioxidant comprises  $\beta$ -carotene.

6. The diesel fuel additive of claim 1, wherein the thermal stabilizer comprises jojoba oil.

7. The diesel fuel additive of claim 1, wherein the thermal stabilizer comprises an ester of a C20-C22 straight chain monounsaturated carboxylic acid.

8. The diesel fuel additive of claim 1, wherein the plant oil extract comprises oil extract of vetch, wherein the antioxidant comprises  $\beta$ -carotene, and wherein the thermal stabilizer comprises jojoba oil.

9. The diesel fuel additive of claim 1, further comprising a diluent.

10. The diesel fuel additive of claim 9, wherein the diluent is selected from the group consisting of toluene, diesel fuel additive, diesel fuel, jet fuel, and mixtures thereof.

11. The diesel fuel additive of claim 1, further comprising an oxygenate.

12. The diesel fuel additive of claim 11, wherein the oxygenate is selected from the group consisting of methanol, ethanol, methyl tertiary butyl ether, ethyl tertiary butyl ether, and tertiary amyl methyl ether, and mixtures thereof.

13. The diesel fuel additive of claim 1, further comprising at least one additional additive selected from the group consisting of cetane improvers, detergents,

corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, antiwear additives, antioxidants, demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, and mixtures thereof.

5           14.     The diesel fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is from about 8.1:1 to about 4.0:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is from about 3.0:1 to about 2.0:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is from about 2.7:1 to about 1.7:1.

10           15.     The diesel fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is from about 8.1:1 to about 4.8:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is from about 3.0:1 to about 2.4:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is from about 2.7:1 to about 2.0:1.

15           16.     The diesel fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is about 8.1:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is about 3.0:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is about 2.7:1.

20           17.     The diesel fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is about 6.1:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is about 2.7:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is about 2.3:1.

25           18.     The diesel fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is about 4.8:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is about 2.4:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is about 2.0:1.

30           19.     The diesel fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is from about 6.1:1 to about 4.0:1,

wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is from about 2.7:1 to about 2.2:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is from about 2.3:1 to about 1.8:1.

5           20.     The diesel fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is about 4.8:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is about 2.4:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is about 2.0:1.

10           21.     The diesel fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is about 6.1:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is about 2.7:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is about 2.3:1.

15           22.     The diesel fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is about 4.0:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is about 2.2:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is about 1.8:1.

20           23.     The diesel fuel additive of claim 8, wherein the additive comprises a first component and a second component, wherein the first component comprises jojoba oil and  $\beta$ -carotene, and wherein the second component comprises jojoba oil and oil extract of vetch.

25           24.     The diesel fuel additive of claim 8, wherein the additive comprises a first component and a second component, wherein the first component comprises about 4 ml jojoba oil per 3785 ml of the first component and about 4 g  $\beta$ -carotene per 3785 ml of the first component, and wherein the second component comprises from about 4 ml jojoba oil per 3785 ml of the second component and about 19.36 g oil extract of vetch per 3785 ml of the second component.

30           25.     The diesel fuel additive of claim 8, wherein the additive comprises a first component and a second component, wherein the first component comprises about 32 ml jojoba oil per 3785 ml of the first component and about 32 g  $\beta$ -carotene per 3785 ml

of the first component, and wherein the second component comprises from about 32 ml jojoba oil per 3785 ml of the second component and about 155 g oil extract of vetch per 3785 ml of the second component.

5           26.     The diesel fuel additive of claim 1, wherein the additive comprises a reformulated diesel fuel additive.

          27.     The diesel fuel additive of claim 1, wherein the diesel fuel additive is a No. 2 low sulfur diesel fuel additive.